WHAT IS CLAIMED:

1. A method of forming oxide layers of varying thicknesses across a semiconductor substrate surface, comprising:

patterning and blocking a semiconductor substrate surface with a layer of photoresist material;

removing a portion of the photoresist material layer to expose a device isolated region on a blocked semiconductor substrate surface;

increasing a differential oxidation rate value of an exposed semiconductor substrate surface;

removing the layer of photoresist material;

oxidizing the semiconductor substrate surface;

forming a first oxide layer having a first thickness on the exposed semiconductor substrate surface; and

forming a second oxide layer having a second thickness on the blocked semiconductor substrate surface, wherein the first thickness is greater than the second thickness.

2. The method of Claim 1, wherein the increase in the differential oxidation rate value further comprises immersing the semiconductor substrate into a solution while passing a current of about 0.1 milliamps per centimeters squared to about 300 milliamps per centimeters squared.

3. The method of Claim 2, wherein the solution comprises hydrogen fluoride, an oxidant and a solvent, wherein the solvent is selected from the group consisting of alcohols, glycols, non-protic solvents, and combinations comprising at least one of the foregoing solvents.

4. The method of Claim 2, wherein the immersion further comprises converting an exposed semiconductor substrate material from a non-porous silicon material to a porous silicon material.

5. The method of Claim 1, wherein the increase in the differential oxidation rate value further comprises converting an exposed semiconductor substrate material from a non-porous silicon material to a porous silicon material.

6. The method of Claim 1, further comprising forming a shallow trench using shallow trench isolation.

7. The method of Claim 6, further comprising filling the shallow trench to form a device isolation region.

8. The method of Claim 1, wherein the removal of the portion of the photoresist layer further comprises etching the photoresist layer.

9. The method of Claim 1, wherein the formation of the first oxide layer further comprises forming a first oxide layer on a porous silicon layer of the semiconductor substrate surface.

10. The method of Claim 1, wherein the formation of the second oxide layer further comprises forming a second oxide layer on a non-porous silicon layer of the semiconductor substrate surface.

11. The method of Claim 1, wherein the formation of the first oxide layer

further comprises forming the first oxide layer having the first thickness on the exposed semiconductor surface by depositing an oxide material.

12. The method of Claim 1, wherein the formation of the second oxide layer further comprises forming the second oxide layer having the second thickness on the blocked semiconductor substrate surface by depositing an oxide material.

13. The method of Claim 1, wherein the formation of the first oxide layer further comprises forming the first oxide layer having the first thickness on the exposed semiconductor substrate by growing the first oxide layer.

14. The method of Claim 1, wherein the formation of the second oxide layer further comprises forming the second oxide layer having the second thickness on the blocked semiconductor substrate surface by growing the second oxide layer.

15. A method for fabricating multiple gate oxide thicknesses across a semiconductor substrate surface, comprising:

photomasking a semiconductor substrate surface with a photoresist material;

etching a portion of the semiconductor substrate surface;

converting a non-porous semiconductor substrate material into a porous semiconductor substrate material;

stripping the photoresist material;

oxidizing the semiconductor substrate surface; and

forming two or more gate oxides, wherein a first gate oxide has a thickness greater than a second gate oxide thickness.

16. The method of Claim 15, wherein the converting further comprises immersing the semiconductor substrate into a hydrogen fluoride electrolytic bath while passing a current of about 0.1 milliamps per centimeters squared to about 300 milliamps per centimeters squared through the bath.

17. The method of Claim 15, wherein the forming further comprises forming the first gate oxide on a porous silicon layer of the semiconductor substrate surface.

18. The method of Claim 15, wherein the forming further comprises forming a second gate oxide on a non-porous silicon layer of the semiconductor substrate surface.

19. A method of forming oxide layers of varying thicknesses across a semiconductor substrate surface, comprising:

photomasking a semiconductor substrate surface with a photoresist material;

etching a portion of the semiconductor substrate surface;

increasing a differential oxidation rate value of an etched portion of the semiconductor substrate surface;

stripping the photoresist material;

oxidizing the semiconductor substrate surface; and

growing two or more oxide layers, wherein a first oxide layer has a thickness greater than a second oxide layer thickness.

20. The method of Claim 19, wherein the growth of the two or more oxide

layers further comprises forming the first oxide layer on the etched portion of the semiconductor substrate surface.

21. The method of Claim 19, wherein the growth of the two or more oxide layers further comprises forming a second oxide layer on a non-etched portion of the semiconductor substrate surface.